

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Moyer et al.  
Serial No.: 09/912,072  
Filed: July 24, 2001  
For: IDENTIFICATION OF POINSETTIA CULTIVARS

Examiner: S. Bausch  
Group Art Unit: 1634

Supplemental Declaration of Dr. James W. Moyer under 37 C.F.R. § 1.132

- I, James W. Moyer, do hereby declare and state as follows:
1. My credentials were presented in a previous declaration submitted May 23, 2005.
  2. I am a named inventor on U.S. Patent Application No. 09/912,072 (hereinafter "the '072 application").
  3. At the time the work in the '072 application was carried out, AFLP technology had not been used to measure genetic diversity in poinsettia or in any species closely related to poinsettia. The application of AFLP technology to any particular plant species is considered uncertain and in light of this, to assess the relevance of the Loh et al., Barcaccia et al., Sukhwinder et al. and Barker et al. publications to poinsettia, it is further relevant to consider how distantly related poinsettia is to rice, willow, *Pelargonium* and *Caladium*. The taxonomic relationship of poinsettia as compared with these plants is shown in Appendix A.
  4. All of the plants at issue are in the Division *Magnoliophyta*, the division to which all flowering plants belong. Two of the plants referenced, rice and caladium, are further classified as monocots (Class *Liliopsida*), while three, pointsettia, willow and geranium, are dicots (Class *Magnoliopsida*).
  5. Rice is further classified into the Subclass *Commelinidae*, Family *Poaceae*, and Genus *Oryza*. The *Commelinidae* contains an enormous diversity of plants including rushes and sedges, cereals, pineapples, ginger, and arrowroot. Therefore, it is nearly impossible to generalize findings with regard to one member of the *Commelinidae* such as a grass (e.g., maize or rice) to another member such as a bromeliad (e.g., a pineapple).
  6. Caladiums are in the Subclass *Aracidae*. The *Aracidae* includes the palms, duckweed and caladium. *Caladium* is further classified into the Family *Araceae* (aroid), and Genus *Caladium*. The aroid group includes edible plants as well as those that are poisonous and includes philodendron, calla lily, Mexican breadfruit and taro. Thus, there is an enormous diversity of plants in the Subclass *Aracidae* and it would be difficult to generalize regarding one member such as duckweed with another member such as palm or philodendron.
  7. Within the class *Magnoliopsida*, or the dicots, willow (*Salix*) is further classified into the Subclass *Dilleniidae*. The *Dilleniidae* is once again a very diverse grouping including, for example, the mustard family (e.g., broccoli), the heath family (e.g., rhododendron and blueberry) and the cucurbit family (e.g., cucumber, squash).

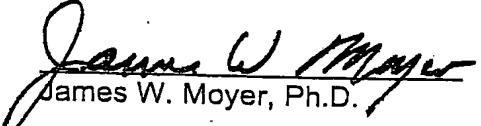


Willow is further classified into the Family *Salicaceae* and the genus *Salix*. Once again, it would be very difficult to generalize findings about a member of this diverse Subclass, such as willow or broccoli, to another member such as blueberry or squash.

8. Both *Pelargonium* and poinsettia are in the Subclass *Rosidae*. This is an incredibly diverse group of plants with 108 families and 58,000 species. Some examples of plant families that fall within the *Rosidae* include the carrot family, the apple family, the legume family (e.g., pea), and the dogwood family. In addition, the *Rosidae* subclass also includes the geranium family to which *Pelargonium* belongs and the very large and diverse euphorbia or spurge family (approximately 300 genera and 7,500 species) to which poinsettia belongs. (Park et al., *Int J. Plant Sci.* 161:425-434 (2000); C.L. Porter, *Taxonomy of Flowering Plants*, W.H. Freeman & Co., 472 pp., p.338, (1967)). *Pelargonium* is further classified into the Genus and Species *Pelargonium peltatum*. Poinsettia is in the Genus *Euphorbia*, which has been described as one of the largest and most complex genera of flowering plants with about 1600 species. *Id.* Clearly, it is nearly impossible to generalize findings about one member in the Subclass *Rosidae*, such as carrot to another member such as dogwood. This would be difficult even within the single Genus *Euphorbia*, of which poinsettia is a member, due to its great size and diversity.

9. Plant scientists interested in determining genetic relationships between and within plant cultivars, varieties or species would be well-aware of the distant relationship between poinsettia and the plants studied in the cited publications, and would not find our achievement in poinsettia obvious in light of results in a tree such as willow, a cereal plant such as rice, an aroid plant such as caladium, or even geranium. It is simply not the case that AFLP analysis in any other plant, particularly distantly related plants such as those in the cited publications, would suggest application of AFLP analysis in poinsettia. A scientist in this field would at most think to try such a technique but would enter into the research without any expectation of success. This would be particularly true in the case of poinsettia since it is known to have a very narrow genetic base (See, prior Moyer Declaration submitted May 23, 2005).

10. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

  
James W. Moyer, Ph.D.

1/25/06  
Date

APPENDIX A. Taxonomic relationships between poinsettia and the plant species in the cited references.

Kingdom: *Planta*.

Subkingdom: *Tracheobionta* – vascular plants

Superdivision: *Spermatophyta* – seed plants

Division: *Magnoliophyta* – flowering plants

Class: *Magnoliopsida* – dicotyledons

Subclass: *Dilleniidae*

Order: *Salicales*

Family: *Salicaceae*

Genus: *Salix* – Willow

Subclass: *Rosidae*

Order: *Geranales*

Family: *Geraniaceae*

Genus: *Pelargonium* – Geranium

Order: *Euphorbiales*

Family: *Euphorbiaceae*

Genus: *Euphorbia* – Poinsettia

Class: *Liliopsida* – monocotyledons

Subclass: *Arecidae*

Order: *Arales*

Family: *Araceae*

Genus: *Caladium*

Subclass: *Commelinidae*

Order: *Cyperales*

Family: *Poaceae*

Genus: *Oryza* – Rice